MIAMI-DADE COUNTY
DEPARTMENT OF REGULATORY AND ECONOMIC RESOURCES (RER)
BOARD AND CODE ADMINISTRATION DIVISION

MIAMI-DADE COUNTY
PRODUCT CONTROL SECTION
11805 SW 26 Street, Room 208
Miami, Florida 33175-2474
T (786) 315-2590 F (786) 315-2599
www.miamidade.gov/economy

NOTICE OF ACCEPTANCE (NOA)

Greenheck Fan Corporation
P. O. Box 410.
Schofield, WI 54476

SCOPE:

This NOA is being issued under the applicable rules and regulations governing the use of construction materials. The documentation submitted has been reviewed and accepted by Miami-Dade County RER - Product Control Section to be used in Miami Dade County and other areas where allowed by the Authority Having Jurisdiction (AHJ).

This NOA shall not be valid after the expiration date stated below. The Miami-Dade County Product Control Section (In Miami Dade County) and/or the AHJ (in areas other than Miami Dade County) reserve the right to have this product or material tested for quality assurance purposes. If this product or material fails to perform in the accepted manner, the manufacturer will incur the expense of such testing and the AHJ may immediately revoke, modify, or suspend the use of such product or material within their jurisdiction. RER reserves the right to revoke this acceptance, if it is determined by Miami-Dade County Product Control Section that this product or material fails to meet the requirements of the applicable building code.

This product is approved as described herein, and has been designed to comply with the Florida Building Code, including the High Velocity Hurricane Zone.

DESCRIPTION: Model EVH-660D Aluminum Louver

APPROVAL DOCUMENT: Drawing No. **EVH-660D**, titled "EVH-660D", sheets 1 through 9 of 9, dated 12/06/2011, prepared by the manufacturer, signed and sealed by Chander P. Nangia, P.E., bearing the Miami-Dade County Product Control approval stamp with the NOA number and approval date by the Miami-Dade County Product Control Section.

MISSILE IMPACT RATING: Large and Small Missile Impact Resistant

LABELING: Each unit shall bear a permanent label with the manufacturer's name or logo, city, state, model/series, and following statement: "Miami-Dade County Product Control Approved", unless otherwise noted herein.

RENEWAL of this NOA shall be considered after a renewal application has been filed and there has been no change in the applicable building code negatively affecting the performance of this product.

TERMINATION of this NOA will occur after the expiration date or if there has been a revision or change in the materials, use, and/or manufacture of the product or process. Misuse of this NOA as an endorsement of any product, for sales, advertising or any other purposes shall automatically terminate this NOA. Failure to comply with any section of this NOA shall be cause for termination and removal of NOA.

ADVERTISEMENT: The NOA number preceded by the words Miami-Dade County, Florida, and followed by the expiration date may be displayed in advertising literature. If any portion of the NOA is displayed, then it shall be done in its entirety.

INSPECTION: A copy of this entire NOA shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at the request of the Building Official.

This NOA consists of this page 1 and evidence page E-1, as well as approval document mentioned above.

The submitted documentation was reviewed by **Carlos M. Utrera, P.E.**

MIAMI-DADE COUNTY APPROVED

09/21/2012

NOA No. 12-0418.06
Expiration Date: October 4, 2017
Approval Date: October 4, 2012

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

A. DRAWINGS

1. Drawing No. **EVH-660D**, titled "EVH-660D", sheets 1 through 9 of 9, dated 12/06/2011, prepared by the manufacturer, signed and sealed by Chander P. Nangia, P.E.

B. TESTS

1. Test reports on: 1) Uniform Static Air Pressure Test, Loading per FBC TAS 202-94
   2) Large Missile Impact Test per FBC, TAS 201-94
   3) Cyclic Wind Pressure Loading per FBC, TAS 203-94
   along with marked-up drawings and installation diagram of Model EVH-660D Aluminum Vertical Louvers, prepared by Architectural Testing, Inc, Report No. **B5211.01-602-18**, dated 03/21/2012, signed and sealed by Shawn G. Collins, P.E.
2. Test Report on Wind Driven Rain Resistance per TAS 100(A)-95 of a Model EVH-660D Aluminum Vertical Louvers, prepared by Architectural Testing, Inc, Test Report No. **B5211.02-602-18,** dated 03/21/2012, signed and sealed by Shawn G. Collins, P.E.

C. CALCULATIONS

1. Stress, deflection and anchorage calculations prepared by Greenheck Fan Corporation, dated 02/08/2012, signed and sealed by Chander P. Nangia, P.E.

D. QUALITY ASSURANCE

1. Miami-Dade Department of Regulatory and Economic Resources (RER)

E. MATERIAL CERTIFICATIONS

1. None.

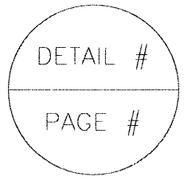
F. STATEMENTS

1. Statement letter of code conformance to 2010 FBC, issued by Chander P. Nangia, P.E., dated 04/02/2012, signed and sealed by Chander P. Nangia, P.E.
2. No financial interest letter issued by Chander P. Nangia, P.E., dated 04/02/2012, signed and sealed by Chander P. Nangia, P.E.

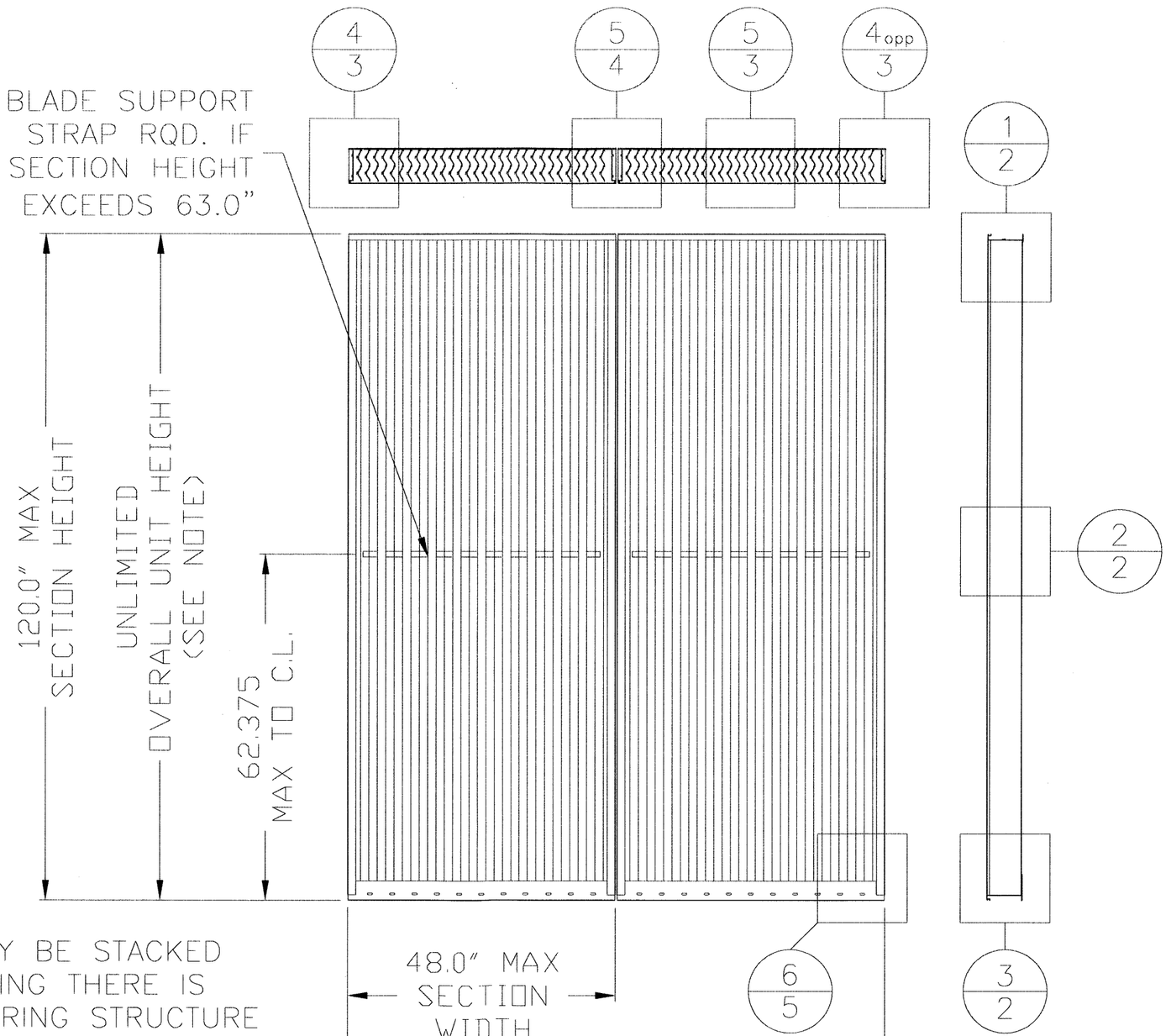
09/21/2012

Carlos M. Utrera, P.E.
Product Control Examiner
NOA No. 12-0418.06
Expiration Date: October 4, 2017
Approval Date: October 4, 2012

DETAIL CALLOUT (TYPICAL)



LOUVER ELEV.



NOTE: SECTIONS MAY BE STACKED VERTICALLY PERMITTING THERE IS SUITABLE LOAD-BEARING STRUCTURE (BY OTHERS) AT THE HEAD/SILL LOCATIONS FOR ATTACHMENT OF THE CONTINUOUS MOUNTING ANGLES.

DATE 12/6/11
DRAWN BY MES
SCALE 1:24
SHEET NO. 1 OF 9
CAD DRAWING NO. EVH-660D

GREENHECK
P.O.BOX 410 SCHOFIELD, WISCONSIN 54476-0410

EVH-660D

TITLE ELEVATION

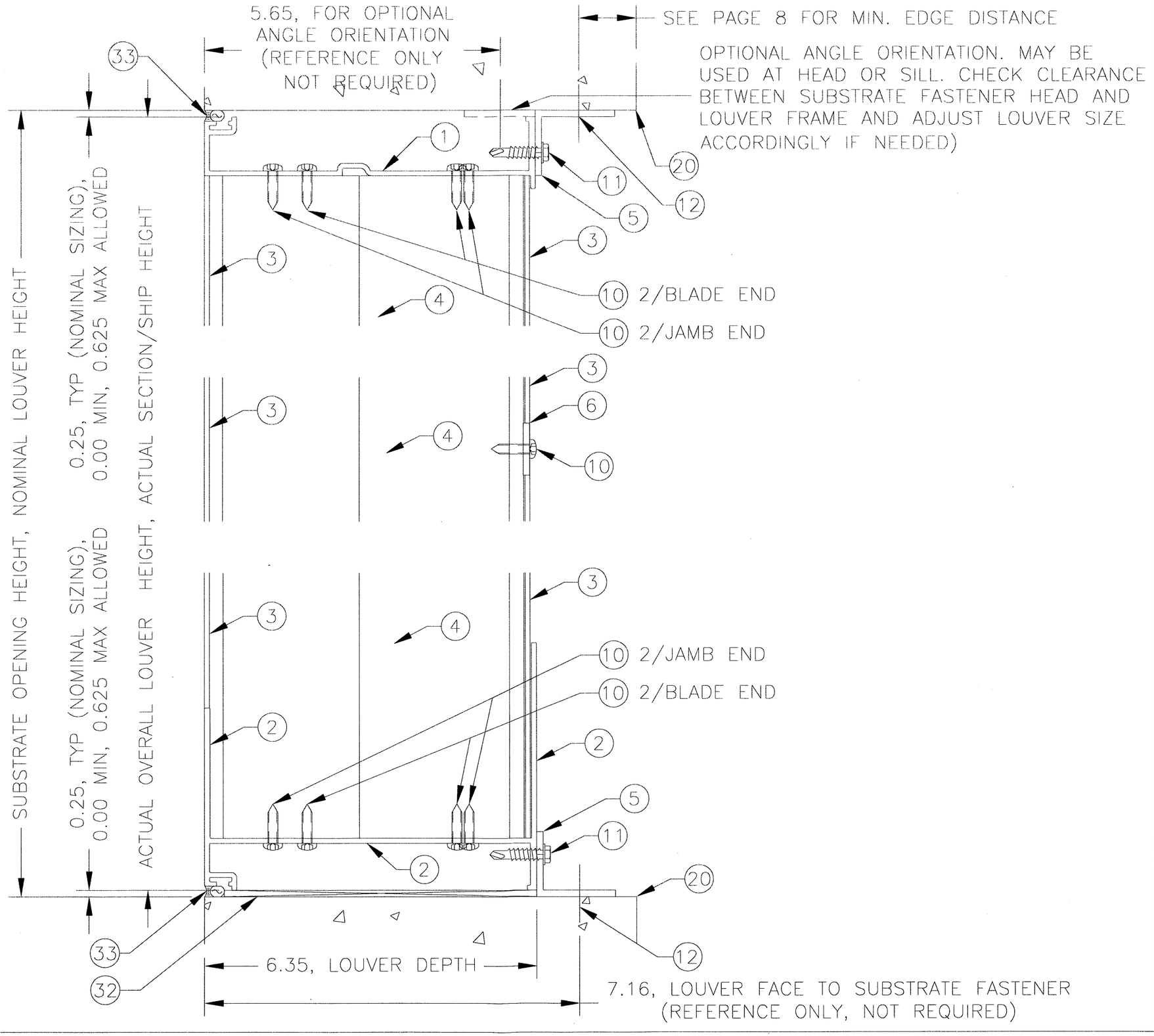
Approved as complying with the Florida Building Code
Date 10/04/2012
NOA# 12-0418.06
Miami Dade Product Control
By

CHANDER P. NANGIA
LICENSE NO. 21938
7/19/2012
STATE OF FLORIDA
PROFESSIONAL ENGINEER

1/2 HEAD DETAIL
SCALE: 1:2

2/2 SUPPORT DETAIL
SCALE: 1:2

3/2 SILL DETAIL
SCALE: 1:2



DRAWN BY MES
DATE 12/6/11
SCALE 1:2
SHEET NO. 2 OF 9
CAD DRAWING NO. EVH-660D

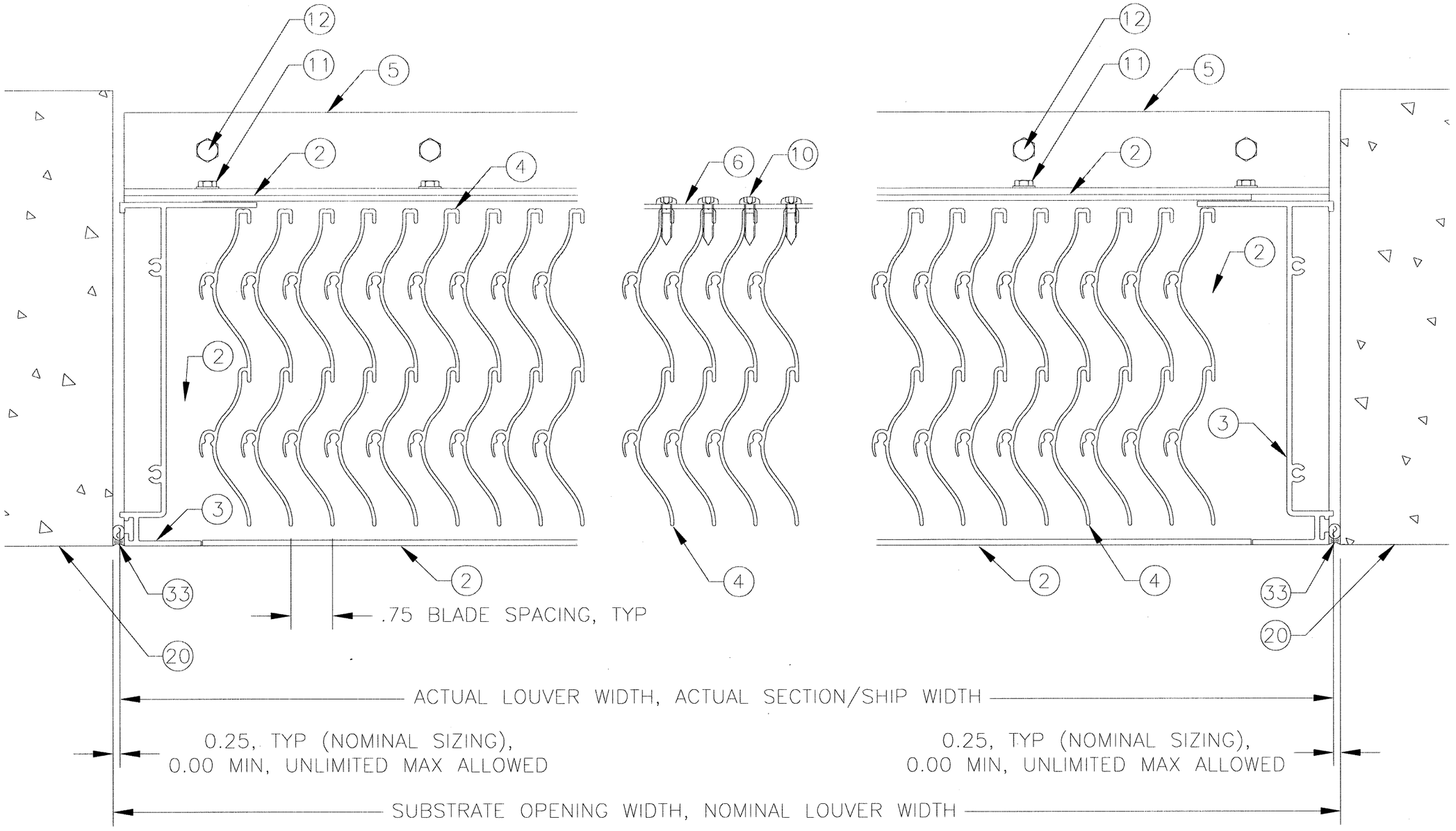
GREENHECK
P.O.BOX 410 SCHOFIELD, WISCONSIN 54476-0410

EVH-660D

TITLE HEAD, SILL, & SUPPORT DETAILS

Approved as complying with the Florida Building Code
Date 10/04/2012
NOA# 12-0418.06
Miami Dade Product Control
By

CHANDER P. NANGIA
LICENSE
No. 21938
11/6/2012
STATE OF FLORIDA
PROFESSIONAL ENGINEER



4/3 JAMB DETAIL
SCALE: 1:2

5/3 SUPPORT DETAIL
SCALE: 1:2

4opp/3 JAMB DETAIL OPPOSITE
SCALE: 1:2

DRAWN BY MES | DATE 12/6/11
SCALE 1:2 | SHEET NO. 3 OF 9
CAD DRAWING NO. EVH-660D

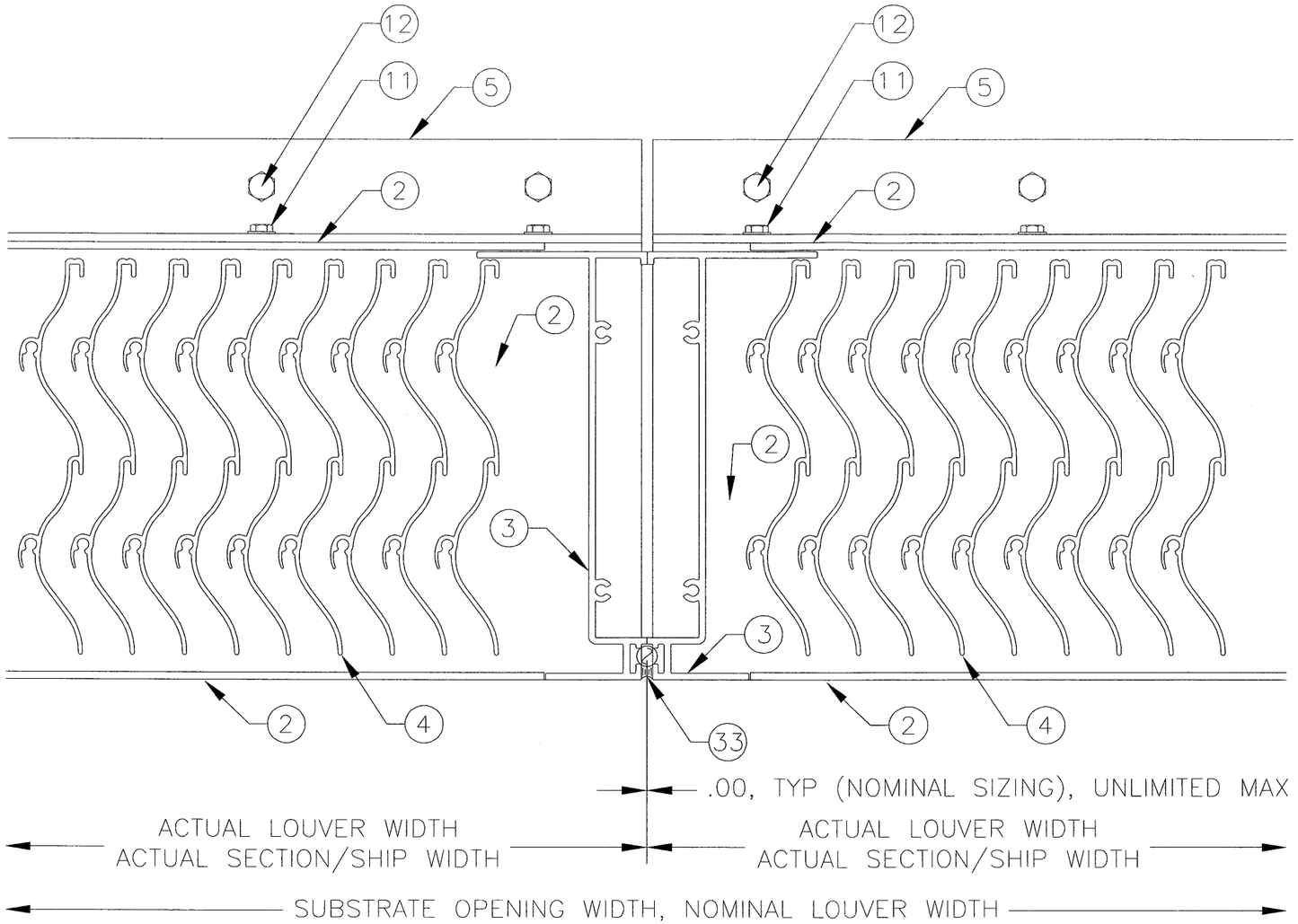
GREENHECK
P.O.BOX 410 SCHOFIELD,
WISCONSIN 54476-0410

EVH-660D

TITLE: JAMB & SUPPORT DETAILS

Approved as complying with the Florida Building Code
Date 10/04/2012
NOA# 12-0418.06
Miami Dade Product Control
By

CHANDER P. NANGIA
No. 21938
STATE OF FLORIDA
PROFESSIONAL ENGINEER
10/20/12



5/4 MULLION DETAIL
SCALE: 1:2

DRAWN BY MES | DATE 12/6/11
SCALE 1:2 | SHEET NO. 4 OF 9
CAD DRAWING NO. EVH-660D

GREENHECK
P.O.BOX 410 SCHOFIELD, WISCONSIN 54476-0410

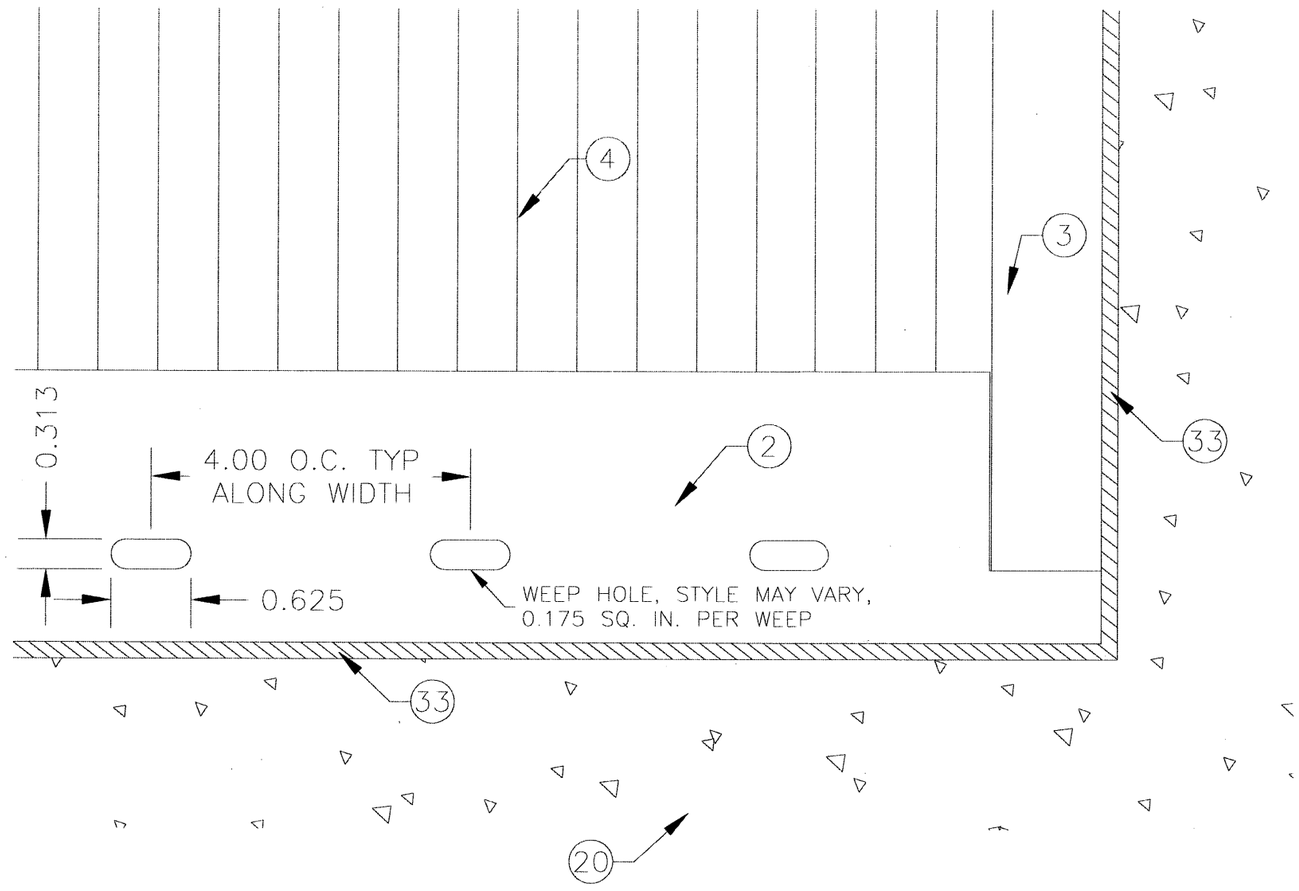
EVH-660D

MULLION DETAIL

TITLE

Approved as complying with the Florida Building Code
Date 10/04/2012
NOA# FL-0418.06
Miami Dade Product Control
By

CHANDER P. NANGIA
LICENSE
No. 21938
STATE OF FLORIDA
PROFESSIONAL ENGINEER
DATE 06/2012



VIEW OF EXTERIOR FACE OF LOUVER,
LOWER RIGHT CORNER

6/5 WEEP DETAIL
SCALE: 1:2

GREENHECK
P.O.BOX 410 SCHOFIELD,
WISCONSIN 54476-0410

EVH-660D

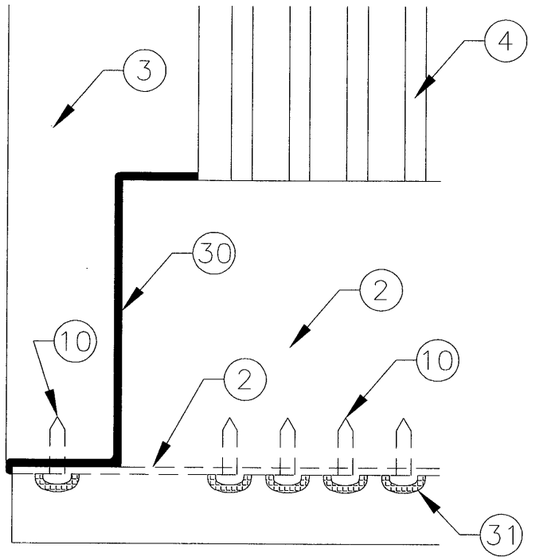
TITLE: WEEP HOLE DETAIL

DRAWN BY	DATE
MES	12/6/11
SCALE	
1:2	
SHEET NO.	
5 OF 9	
CAD DRAWING NO.	
EVH-660D	

Approved as complying with the
Florida Building Code
Date 10/04/2012
NOA# 12-0418.06
Miami Dade Product Control
By

CHANDER P. NANGIA
LICENSE
No. 54938
STATE OF
FLORIDA
PROFESSIONAL ENGINEER
10/4/2012

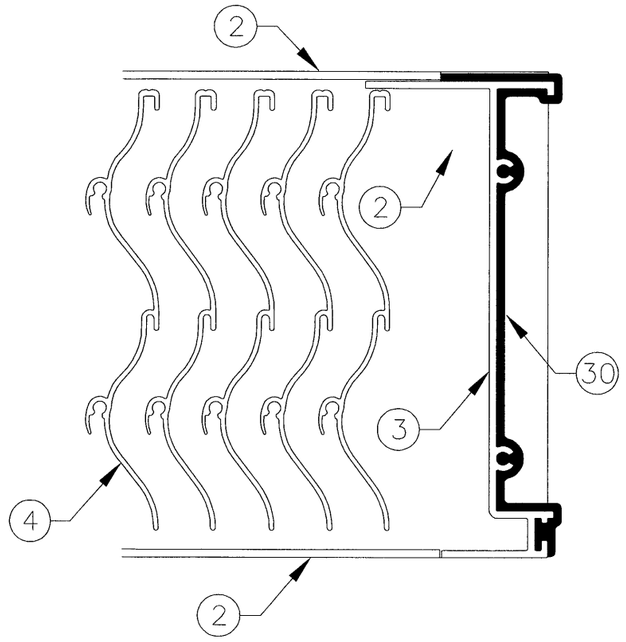
DARKENED AREAS INDICATE AREAS SEALED BY FACTORY, TYP AT BOTH SILL ENDS AND ALL BLADE-SILL AND JAMB-SILL FASTENERS. SCREWS ALLOWED TO USE A GASKET FOR SEALING VS A "WET" APPLIED SEAL OVER THE TOP OF THE SCREW.



VIEW OF INTERIOR FACE OF LOUVER, LOWER LEFT CORNER

7/6 SEALING DETAIL 1
SCALE: 1:2

DARKENED AREAS INDICATE AREAS SEALED BY FACTORY, TYP AT BOTH SILL ENDS.



SECTIONAL VIEW, LOOKING AT SILL

8/6 SEALING DETAIL 2
SCALE: 1:2

DRAWN BY	MES
DATE	12/6/11
SCALE	1:2
SHEET NO.	6 OF 9
CAD DRAWING NO.	EVH-660D

GREENHECK
P.O.BOX 410 SCHOFIELD, WISCONSIN 54476-0410

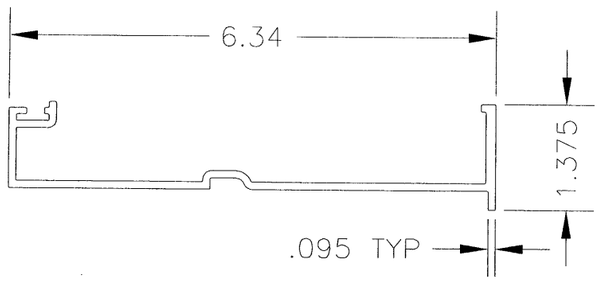
EVH-660D

TITLE: SEALING DETAILS

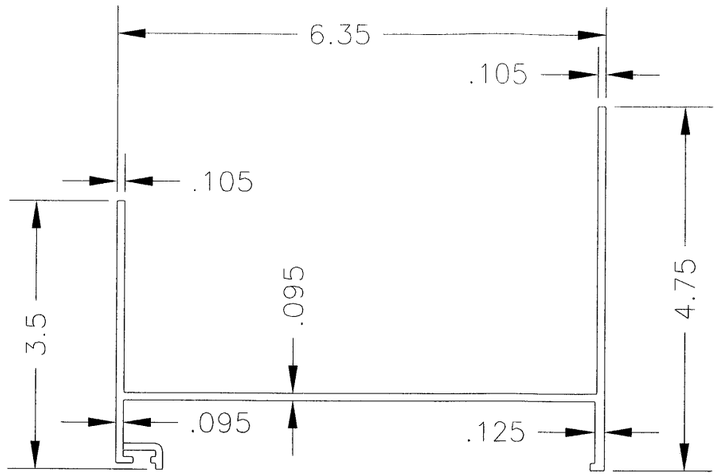
Approved as complying with the Florida Building Code
Date 10/04/2012
NOA# 12-0418.06
Miami Dade Product Control
By

CHANDER P. NANGIA
LICENSE
No. 21938
STATE OF FLORIDA
PROFESSIONAL ENGINEER

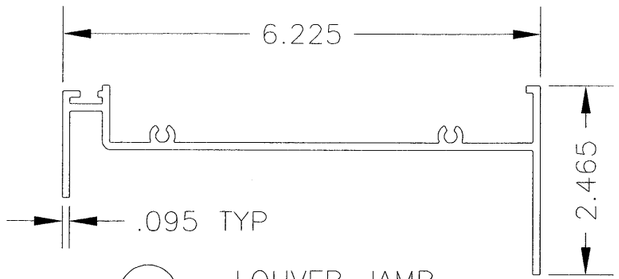
APR 4 2012



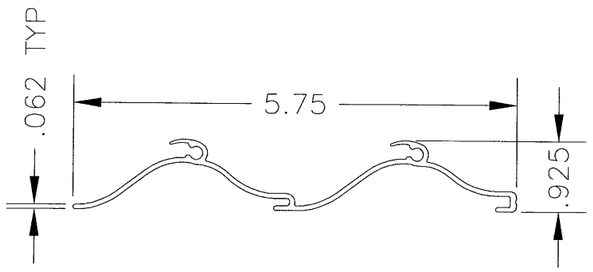
1 LOUVER HEAD
6063-T5 ALUMINUM



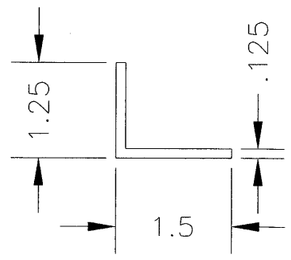
2 LOUVER SILL
6063-T5 ALUMINUM



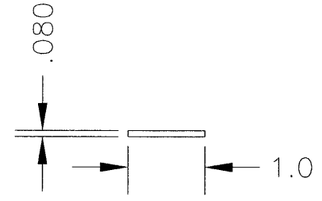
3 LOUVER JAMB
6063-T5 ALUMINUM



4 LOUVER BLADE
6063-T5 ALUMINUM



5 CONTINUOUS MOUNTING ANGLE
6061-T6 ALUMINUM



6 BLADE SUPPORT STRAP
6061-T6, 5052-H32,
3003-H14, OR 1100-H14
ALUMINUM

ALL SHOWN DIMENSIONS ARE MINIMUMS

DRAWN BY MES
DATE 12/6/11
SCALE 1:2
SHEET NO. 7 OF 9
CAD DRAWING NO. EVH-660D

GREENHECK
P.O.BOX 410 SCHOFIELD,
WISCONSIN 54476-0410

TITLE EVH-660D PROFILE DETAILS

Approved as complying with the Florida Building Code
Date 10/04/2012
NOA# 12-0418.06
Miami Dade Product Control
By

CHANDER P. NANGIA
LICENSE
No. 21938
STATE OF FLORIDA
PROFESSIONAL ENGINEER
APR 03 2013

3/8" POWERS WEDGE BOLT FASTENER TABLE

FASTENER NUMBER	12A				
DESCRIPTION	3/8" POWERS WEDGE BOLT				
SUBSTRATE	NORMAL WEIGHT CONCRETE			CMU (1.5 KSI GROUT FILLED)	
MINIMUM	2.5 KSI			6" WIDE, GRADE N, TYPE II, LIGHT/MEDIUM/NORMAL WEIGHT CMU CONFORMING TO ASTM C90	
EDGE DISTANCE (MIN)	2 IN.	3 IN.	4-1/2 IN.	1-1/2 IN.	2 IN.
PENETRATION (MIN)	2-1/8 IN.			2-1/2 IN.	
LOUVER HEIGHT (IN.)	SPACING (IN.)			SPACING (IN.)	
>108 & ≤120	4	6	8	NOT ALLOWED	NOT ALLOWED
>96 & ≤108	6	8	10	NOT ALLOWED	NOT ALLOWED
>84 & ≤96	6	8	10	NOT ALLOWED	NOT ALLOWED
>72 & ≤84	6	10	12	NOT ALLOWED	NOT ALLOWED
>60 & ≤72	8	12	14	NOT ALLOWED	6
>48 & ≤60	10	14	18	NOT ALLOWED	6
>36 & ≤48	12	18	20	NOT ALLOWED	8
>24 & ≤36	18	20	20	6	10
>12 & ≤24	20	20	20	8	14
>0 & ≤12	20	20	20	12	20

1/4" TAPCON SCREW FASTENER TABLE

FASTENER NUMBER	12B		
DESCRIPTION	1/4" TAPCON		
SUBSTRATE	CONCRETE OR CMU (GROUT FILLED)		
MINIMUM	3.192 KSI CONCRETE OR 3.192 KSI GROUT		
EDGE DISTANCE (MIN)	1 IN.	1-1/2 IN.	2-1/2 IN.
PENETRATION (MIN	1-3/4 IN.		
LOUVER HEIGHT (IN.)	SPACING (IN.)		
>108 & ≤120	2	2	4
>96 & ≤108	2	4	4
>84 & ≤96	2	4	6
>72 & ≤84	2	4	6
>60 & ≤72	4	6	8
>48 & ≤60	4	6	10
>36 & ≤48	6	8	12
>24 & ≤36	8	12	16
>12 & ≤24	12	18	20
>0 & ≤12	20	20	20

LAG SCREW, SCREW, & BOLT W/NUT FASTENER TABLE

FASTENER NUMBER	12C	12D	12E	
DESCRIPTION	3/8" LAG SCREW	1/4" LAG SCREW	1/4"-20 SCREW OR BOLT W/NUT	
SUBSTRATE	WOOD		STEEL	
MINIMUM	G=.42		A36 STEEL OR Fy>=36 KSI	
EDGE DISTANCE (MIN)	1-1/2 IN.		1/2 IN.	
PENETRATION (MIN)	2-3/4 IN.		16GA (0.06 IN.)	3/16 IN.
LOUVER HEIGHT (IN.)	SPACING (IN.)		SPACING (IN.)	
>108 & ≤120	6	4	6	8
>96 & ≤108	6	4	6	10
>84 & ≤96	6	4	8	12
>72 & ≤84	8	6	8	12
>60 & ≤72	10	6	10	16
>48 & ≤60	12	8	12	18
>36 & ≤48	14	10	16	20
>24 & ≤36	20	14	20	20
>12 & ≤24	20	20	20	20
>0 & ≤12	20	20	20	20

CONTINUOUS ANGLE TO LOUVER FRAME SCREW (FASTENER # 11)

LOUVER HEIGHT (IN.)	SPACING (IN.)
>108 & ≤120	2
>96 & ≤108	2
>84 & ≤96	2
>72 & ≤84	4
>60 & ≤72	4
>48 & ≤60	4
>36 & ≤48	6
>24 & ≤36	8
>12 & ≤24	14
>0 & ≤12	20

DATE 12/6/11
DRAWN BY MES
SCALE NTS
SHEET NO. 8 OF 9
CAD DRAWING NO. EVH-660D

GREENHECK
P.O.BOX 410 SCHOFIELD, WISCONSIN 54476-0410

EVH-660D

TITLE FASTENER TABLES

Approved as complying with the Florida Building Code
Date 10/04/2012
NOA# 12-0418.06
Miami Dade Product Control
By

CHANDER P. NANGIA
LICENSE
No. 21938
STATE OF FLORIDA
PROFESSIONAL ENGINEER

NOV 13 2012

ITEM	DESCRIPTION	MATERIAL	NOTES
1	LOUVER HEAD	ALUM	
2	LOUVER SILL	ALUM	
3	LOUVER JAMB	ALUM	
4	LOUVER BLADE	ALUM	3/4" SPACING
5	CONTINUOUS MOUNTING ANGLE	ALUM	AT HEAD AND SILL ONLY
6	BLADE SUPPORT STRAP, FOR HEIGHTS > 60.875" ONLY	ALUM	NOT ATTACHED TO JAMBS
10	#10-24 x 3/4" MIN SCREW	STEEL* /SS	
11	1/4-20 x 1" MIN SCREW	STEEL* /SS	
12A	3/8" POWERS WEDGE BOLT	STEEL* /SS	SEE FASTENER TABLE PAGE
12B	1/4" TAPCON SCREW	STEEL* /SS	SEE FASTENER TABLE PAGE
12C	3/8" LAG SCREW	STEEL* /SS	SEE FASTENER TABLE PAGE
12D	1/4" LAG SCREW	STEEL* /SS	SEE FASTENER TABLE PAGE
12E	1/4-20 SCREW OR 1/4-20 BOLT W/NUT	STEEL* /SS	SEE FASTENER TABLE PAGE
20A	CONCRETE, 2.5 KSI MIN	CONCRETE	NOT BY MANUFACTURER
20B	CMU, 1.5 KSI MIN GROUT FILLED	CONCRETE	NOT BY MANUFACTURER
20C	STRUCTURAL STEEL, 3/16" MIN	STEEL	NOT BY MANUFACTURER
20D	STEEL STUD, 16GA MIN	STEEL	NOT BY MANUFACTURER
20E	WOOD SUBSTRATE, G=0.42 MIN DENSITY	WOOD	NOT BY MANUFACTURER
30	SEALANT, FACTORY APPLIED	VARIES	FACTORY APPLIED
31	SEALED SCREW HEAD, FACTORY APPLIED	VARIES	FACTORY APPLIED
32	SHIMS, OPTIONAL, AS REQUIRED, INCOMPRESSIBLE	VARIES	NOT BY MANUFACTURER
33	SEALANT AND BACKER ROD	VARIES	NOT BY MANUFACTURER

(STEEL/STAINLESS-STEEL/ALUMINUM PARTS MAY BE MADE OUT OF ALTERNATE ALLOY THAT HAS EQUAL OR GREATER YIELD STRENGTH)

* STEEL MUST HAVE CORROSION RESISTANT COATING.

GENERAL NOTES:

1. IT SHALL BE THE RESPONSIBILITY OF THE PERMIT HOLDER TO VERIFY THE STRUCTURAL INTEGRITY OF THE EXISTING STRUCTURE TO SUPPORT THE LOADS IMPOSED BY THE PENTHOUSE ASSEMBLY.

2. THIS LOUVER HAS BEEN DESIGNED AND TESTED IN ACCORDANCE WITH MIAMI-DADE COUNTY PROTOCOLS [AND QUALIFIED IN ACCORDANCE WITH THE 2010 FLORIDA BUILDING CODE (FBC) AND TEST PROTOCOLS/STANDARDS]:
   TAS-201 (LARGE MISSILE IMPACT)
   TAS-202 (UNIFORM STATIC PRESSURE)
   TAS-203 (CYCLIC FATIGUE)
   TAS-100(A) (WIND-DRIVEN RAIN)
   AMCA STANDARD 550 (WIND-DRIVEN RAIN)

3. THIS LOUVER HAS BEEN DESIGNED, TESTED, AND APPROVED TO WITHSTAND DESIGN PRESSURES OF UP TO AND INCLUDING +/-150 PSF.

4. THE LOUVER MAY BE INSTALLED IN A LOCATION WHERE THE ROOM BEHIND THE LOUVER IS NOT DESIGNED TO DRAIN WATER PENETRATING INTO THE ROOM OR THE ROOM WILL HOUSE NON-WATER RESISTANT OR WATER PROOF EQUIPMENT, COMPONENTS, OR SUPPLIES.

5. THE MAXIMUM SINGLE SECTION SIZE IS 48" WIDE BY 120" HIGH. THE MAXIMUM OVERALL/ASSEMBLED SIZE IS UNLIMITED WIDE (BY USE OF MULTIPLE SECTIONS OF 48" WIDE OR LESS) BY 120" HIGH. SECTIONS/ASSEMBLIES MAY BE STACKED VERTICALLY PROVIDED THERE IS SUITABLE STRUCTURAL SUPPORT (DESIGNED AND INSTALLED BY OTHERS) TO SUPPORT ALL LOADS TRANSFERRED FROM THE LOUVER HEAD AND/OR SILL TO THE SUBSTRATE.

6. A HORIZONTAL BLADE SUPPORT STRAP IS REQUIRED IF SECTION HEIGHT IS GREATER THAN 63".

7. ALL WOOD SUBSTRATE SHALL BE G = 0.42 DENSITY OR BETTER.

8. ALL STEEL STUD SUBSTRATE SHALL BE MIN. 16 GA. FY = 36 KSI.

9. ALL STRUCTURAL STEEL SUBSTRATE SHALL BE MIN. 3/16" THICK FY = 36 KSI.

10. ALL CONCRETE SUBSTRATE SHALL BE MIN. 2,500 PSI.

11. CONCRETE MASONRY SHALL BE MINIMUM OF: 6" WIDE, GRADE N, TYPE II, LIGHT/MEDIUM/NORMAL WEIGHT CMU CONFORMING TO ASTM C90, AND MIN. 1,500 PSI GROUT-FILLED.

12. LOUVER CONSTRUCTION: HEAD, SILL, JAMBS, AND BLADES ARE SQUARE CUT AT BOTH ENDS. BLADE SPACING IS 3/4" MAX. BLADES ARE SECURED TO THE HEAD/SILL WITH (2) SCREWS PER BLADE END. EACH JAMB IS SECURED TO THE SILL AND HEAD WITH (2) SCREWS PER JAMB END.

13. THE LOUVER MANUFACTURER DOES NOT DETERMINE THE STRUCTURAL INTEGRITY OF THE SUBSTRATE STRUCTURE.

14. INSTALLER TO PROVIDE SEPARATION OF DISSIMILAR MATERIALS AS REQUIRED. SEE FL BLDG CODE SECTION 2003.8.4 FOR DETAILS.

DRAWN BY MES | DATE 12/6/11
SCALE NTS | SHEET NO. 9 OF 9
CAD DRAWING NO. EVH-660D

GREENHECK
P.O.BOX 410 SCHOFIELD, WISCONSIN 54476-0410

EVH-660D

TITLE: DESCRIPTIONS & GENERAL NOTES

Approved as complying with the Florida Building Code
Date 10/04/2012
NOA# 12-0418.06
Miami Dade Product Control
By

CHANDER P. NANGIA
LICENSE
No. 21938
STATE OF FLORIDA
PROFESSIONAL ENGINEER